

This report concerns some 600 women who had either remained active cases in Jamaican family planning clinics or had dropped out. Women more likely to drop out were single (vs. married or common law union), either very young or very old, with few or large number of living children, who never had a miscarriage, and whose last pregnancy was not a recent one. Religion, social class variables (on clients and partners), and type of contraceptive method failed to differentiate active cases from drop-outs. An additional sample of 300 drop-outs was interviewed on reasons for dropping out.

Factors Associated With Dropping out of Family Planning Clinics in Jamaica

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Introduction

The past decade has seen the creation of national family planning programs in many countries. While not all of these programs have explicitly stated their aims, presumably they are trying to achieve one or more of the following goals: reduction of the birth rate by reducing the average family size or the mean fertility of women in their reproductive years, spacing of children, and preventing unwanted children after desired family size has been achieved. These programs face at least three types of problems. First, the target population of "at risk" women has to be identified in terms of their numbers and their demographic and social characteristics. Second, the at risk population must be motivated to enroll in the family planning program. Thirdly, those who have been admitted to the program must be maintained successfully on their contraceptive regimen.

Like many other social programs, family planning has been difficult to evaluate and a variety of approaches have been used. The earliest method was to examine program "effort" or "input" and to obtain a count of: the number of new clinics opened, the number of new personnel trained, and the number of new admissions to the program's clinics. These variables are thought to reflect "continuity of service"¹ and "accomplishment."² However, determination of the extent of "effort" is of limited usefulness unless one also knows something about the extent of the problem to which the effort is directed and about some of the consequences of this effort.

More systematic approaches to evaluation give an explicit recognition to one or more of the three problems listed above. For example, a number of studies have been concerned with defining the characteristics of women who may be counted as being in need of contraception and as being at risk of unwanted conception.^{1,3-8} Estimates can then be made of the size of the population at risk in specific segments of the society, such as the poor, or for specific areas served by a family planning program. Moreover, by subtracting the proportion of people served by the program, it is possible to calculate one index of program effectiveness, the proportional reduction in the population at risk.

However, the proportional reduction in the population at risk via enrollment in the family planning program is

only an indirect indication of the program's success and, ultimately, one should also be able to demonstrate an average reduction in the fertility of women in the reproductive age groups. Reductions in fertility attributed to family planning programs have been reported for Taiwan,⁹⁻¹³ Puerto Rico,¹⁴ Lebanon,¹⁵ and the U.S.A.¹⁶ Chang¹⁷ has discussed some of the issues in attributing reductions in fertility to family planning programs rather than some "extraneous" causes.

In almost all reports, the calculations of the reduction in the population at risk use enrollment numbers based on new admissions. This ignores the problem of successfully maintaining the client on her contraceptive regimen and thus over-estimates the effectiveness of the program. Surely, not all new admissions stay in the program, use the contraceptives, use them properly, and experience no unwanted pregnancies. In effect, the continuity of service can be examined in a number of ways. How many clients continue to attend their family planning clinic vs. how many become *clinic drop-outs*? How many women, including those who drop-out, continue to use their contraceptive vs. how many become *contraceptive drop-outs*? In addition, there is the issue of how many of those women who use their contraceptive become *contraceptive failures* (i.e., experience an unwanted pregnancy), either because of incorrect use or because of the inherent imperfection of the particular contraceptive method. Both contraceptive drop-outs and contraceptive failures have received considerable attention from earlier studies,¹⁸⁻²¹ but concern with clinic drop-outs is a more recent phenomenon in the family planning literature.

Clinic Drop-Outs: Previous Studies and Some Theoretical Issues

There are good reasons for examining a family planning program through a study of its clinic drop-outs. Among the failures in the total program, clinic drop-outs are far more numerous than contraceptive drop-outs and contraceptive failures. However, clinic drop-outs do not necessarily stop using contraceptives altogether, and there is

a need to determine their subsequent pregnancy experiences and to find out which variables contribute to the continued use of contraceptives after dropping out. Moreover, the opinions of the drop-outs, a group of clients who are likely to be critical of the family planning program, can be obtained and put to good use by the program's administrators.

Calculation of drop-out rates will clearly be influenced by the operational definition of when a client becomes a drop-out and also by the length of the observation period. If missing a single visit were sufficient to classify a client as a drop-out, then the drop-out rate will naturally be higher than if the client were allowed a period of delinquency (missed visits) before being considered a drop-out. Most reports do explicitly state what the period of observation is, but some of them fail to give adequate definitions of when they consider a client to have become a drop-out. Table 1 summarizes the highlights of a number of drop-out studies and shows that a variety of definitions have been used. Such a variety precludes meaningful comparisons across studies and suggests that the wide disparity in the estimated drop-out rates is partly due to the variety of definitions of drop-outs and of the observation period.

The reasons for dropping out of a clinic have been determined in only a few studies. Creedy and Polgar²³ list the following reasons as the most frequent ones: pregnancy (either unintentional or planned), difficulty in getting to clinic, going to a private physician, and no longer needing birth control. Objections to a particular method or to con-

traception in general were quite rare. Reynolds³⁰ found that diminished need for contraceptives (including being pregnant) accounted for some 43% of reasons for women's failure to return to the clinic; complaints about poor service or location of clinic were expressed by 32%, while 18% mentioned side effects of the contraceptive method.

Dropping out of clinics appears to be associated with the type of contraceptive used. As Table 1 illustrates, programs where separate drop-out rates were calculated show the rates for IUD (intrauterine device) users below those for oral pill users.^{11,13,28} Hall²⁸ has concluded that "the type of (contraceptive) method was the single most important factor influencing a woman's chances of continuing contraception." The association of drop-out rates with age has been examined in two reports. Gordis³¹ studied 100 sexually active nulliparous adolescents who were mainly taking the pill. The drop-out rate, which averaged 50% for the total group despite an intensive follow-up, was lower among those 15 years and younger. However, when the younger clients did drop out, they were more likely to be pregnant. In Singapore,²⁸ the higher drop-out rates were found among those under 20 or over 45. The younger women tended to terminate for reasons of pregnancy (presumably both planned and unplanned) while the older ones did so for medical reasons. The same study also reported higher drop-out rates for those with 0 or 1 living child (vs. 2 or more) and those who had not become pregnant within the last 2 years (vs. those who had). Malay and Chinese ethnic groups

Table 1—Summary of Previous Findings on Family Planning Clinic Drop-out Rates*

Study	Country studied	Observation period	Definition of drop-out	Contraceptive method used	Sample size for new admissions	Drop-out rate (as % of new admissions)
Dubrow & Kuder ²²	U.S.A. (New York)	2 years	"failure to return for further follow-up"	Jelly, cream diaphragm	2046	44.5
Creedy & Polgar ²³	U.S.A.	1 year	did not return 3 mths. before due date or 6 mths. after it	all	21917	51.47
Population Council ²⁴	Korea (Koyang)	1 year	not actively registered at end of observation period	diaphragm, condom, foam	490	about one-third
Population Council ²⁵	Pakistan (Comilla)	2 years	unspecified	condom, foam	129	fewer than 10%
Population Council ²⁶	Pakistan (Lulliani)	1 year	IUD not in situ at end of obs. period	IUD	134	36.5
Population Council ¹²	Taiwan	14 months	IUD not in situ at time of interview	IUD	2000	33.0
Population Council ¹³	Taiwan	6 months	unspecified	pill IUD	1017 NA	"almost 1 in 2" "about 1 of 4"
Population Council ²⁷	India	1 year	IUD not in situ at end of obs. period	IUD	20000	33.0

Table 1 (continued)

Hall ²⁸	U.S.A. (Baltimore)	1 year	pill would have run out if correctly used—did not return to clinic, IUD removed/expelled, accidentally preg.	pill IUD	12092	46.0 37.0
Kanagaratnam & Kim ²⁹	Singapore	1 year	not using pill 4 mths. after end of obs. period	pill	2992	45.5
Beasely et al. ³	U.S.A. (New Orleans)	1 year	failed to comply with revisit schedule during obs. per.	all	9210	13.6
Reynolds ³⁰	Trinidad & Tobago	2 months	patient not returned to clinic 3+ mths. since missing last scheduled appointment	all	680	19.1
Gordis et al. ³¹	U.S.A. (Baltimore)	1 year	"terminated relation with program"	pill	100 sexually active nulliparous adolescents	nearly 50%
Takeshita et al. ³²	West Malaysia	1 year	not using given contraceptive at time of interview	pill (91%)	2609	35.3
Keeny & Cernada ¹¹	Taiwan	1 year	IUD not in situ at interview (after end of obs. per.), pill not being used at end of obs. per.	IUD pill	4820 2217	33.3 68.0

* In reviewing the literature it was sometimes necessary to calculate the clinic drop-out rates from other data presented in the paper. In all cases the drop-out rate reflects the magnitude of dropping out for all reasons.

dropped out less than Indians and Pakistanis. Lower drop-out rates were also observed among women with no formal education (vs. those with some education).

At the present time, there does not exist either a theoretical framework or a body of knowledge which would offer a complete picture of the dynamics of dropping out of family planning clinics. Apparently, we are dealing with at least three classes of variables: (a) those describing the client, (b) those which make up the psychosocial milieu in which contraception is practiced, and (c) those which pertain to contraceptive use, i.e., the clinic variables and the contraceptive itself.

Included in the first class are such variables as: age, parity, number of living children, education, religious beliefs, general medical history and history of miscarriages, and child mortality.

The psychosocial milieu of contraceptive use includes the partner's, the relatives', and the friends' attitudes toward contraceptive use. Such attitudes may, of course, be partly a function of these individuals' own education, occupation, and personal history. In the case of the partner's attitude, the type of union and the stability of the

union would appear to be possibly critical factors. The social organization of the family, housing arrangements, presence or absence of grandparents, and the number of children in the household must all be considered in this category.

The clinic routine, its geographical location, opening times, waiting periods, and the attitude of clinic staff can perhaps all influence the client's reaction to the clinic and thus her subsequent performance at that clinic. Finally, the contraceptive method itself can contribute to the client's decision to drop out of the clinic because of physical side-effects, psychological side-effects or even for esthetic reasons.

The above listing of different classes of relevant variables is only the beginning of building a theoretical framework. These variables are certainly not an independent, additive set of dimensions associated with dropping out of a family planning clinic, and, therefore, the conceptual and empirical interrelationships among them have to be eventually spelled out as well. Moreover, subsequent elaborations of the theoretical framework will also have to concern themselves with the potential relevance of personality

and motivational variables which are presently left out altogether.

The Setting of the Study and the Methods

The present paper seeks to determine which variables are, and are not, related to dropping out of family planning clinics in Jamaica. Four classes of variables are examined in the process: (a) client characteristics as age, education, religion, parity, number of living children, number of miscarriages, and time since last pregnancy; (b) characteristics of the psychosocial milieu, such as type of union and rural vs. urban place of residence; (c) type of contraceptives being used; and (d) stated reasons for dropping out.

Table 2 presents some salient national data for Jamaica. It is important to note that Jamaica's high birth rate, in combination with a low infant mortality rate (34.7), has resulted in a large proportion (45%) of individuals under 15, as compared with the usual proportions of 20% to 30% in the more developed countries. Consequently, the number of fertile women in Jamaica will increase for the next fifteen years as those girls now less than 15 years of age move into and through their reproductive cycle and any reduction in the population growth rate over this same period must come from a decrease in fertility for each woman.

Table 2—Selected Demographic, Social, and Economic Data for Jamaica*

Population: in 1970	1.9 million
estim. for 1980	2.6 million
Birth rate:	32 per 1000 popul.
Death rate:	7-8 per 1000 popul.
Rate of natural increase:	2.6%
Percent of population:	
under 15	45%
65 and over	4%
Number of women:	
15-44 yrs., 1970 estim.	0.47 million
married (all ages, estim.)†	0.32 million
Area	10,962 sq. kilometers
Density (1967 popul.)	171 per. sq. kilometer
Percent of total popul. residing:	
in urban areas‡	23%
in cities 100,000 and over	8%
Literacy rate for 1960:	
males, 15-19	86.3%
females, 15-19	94.5%
Per capita income, U.S. \$	493
Number of: doctors	1.8 per 1000 popul.
midwives	0.6 per 1000 popul.
nurses	0.4 per 1000 popul.
hospital beds	0.3 per 1000 popul.

* Source: The 1969 Registrar General of Jamaica and Nortman;³³ also, calculations by present authors, based on data from these sources.

† See text for an important qualification of the reporting of marital status in Jamaica.

‡ An area with a church, a post office, a police station, and a population of at least 2,000.

The 470,000 women in the age range of 15 to 44 may be viewed as the target population of family planning programs. In Jamaica, most women in this age group are considered "at risk," partly because of the social situation in which only 27% of the women are married.

The special nature of Jamaican sexual unions requires some additional explication. Stycos and Back³⁴ have proposed four categories: married, common law, visiting relationship, and single. Common law unions are stable, cohabiting relationships without a legal bond and which can be broken without any religious or legal sanction. Visiting relationships are non-cohabiting sexual relationships which have persisted for at least three months. Marriage is usually entered into quite late in life and represents a considerable improvement in a woman's social status. A preliminary to marriage is almost invariably a lengthy period of cohabitation. This is the common law union and many children are born within this kind of union. Not all common law unions, however, eventuate in a marriage. Many are dissolved and lead to another common law union with a different partner. The stability of common law unions has been the subject of some controversy and most writers³⁵⁻³⁸ consider the common law unions to be equivalent to marriage because they are a stabilizing factor in lower-class society and provide a relationship for child-bearing and child rearing. More recently, the equivalence of marriage and common law union has been challenged by Blake,³⁹ who has described lower-class Jamaicans as having quite unstable family lives outside of marriage and who pointed out the widespread preference, among Jamaican women, for marriage. Indeed Blake found that few common law unions progressed to marriage, but rather that marriage to one man came after the breakup of the union with a different man. Schlesinger⁴⁰ has suggested that the stability of the common law union may vary in urban and rural areas. The urban common law union is likely to be of short duration reflecting constantly changing liaisons in these rapidly growing areas. Rural common law unions may be much more permanent and indeed may have the stability of a legal marriage.

The early history of family planning in Jamaica has been discussed by Gold⁴¹ and Harewood.⁴² The first voluntary organization, established in 1939, was the Birth Control League. In 1941, it became the Jamaica Family Planning League which, in 1962, gave rise to the Jamaica Family Planning Association. This was a voluntary organization under which all of the island's family planning clinics were united. In June of 1966, the Ministry of Health of the government of Jamaica started a national program for family planning, and a year later the National Family Planning Board was created in order to coordinate all government efforts in this area. This Board is autonomous and answerable to the government only in terms of general policy.

The present study utilized clinic records to draw three samples: a drop-out sample, an active client sample, and an interview sample. This report is primarily based on the first two, while the data from the interview sample are used only to obtain the client's stated reasons for dropping out and to check on the generality of some of the main findings.

Upon admission to any family planning clinic in Jamaica, each client is interviewed by a clerk or nurse, who uses the Admissions Record to collect a variety of

demographic and social information about the client and her partner. (After August, 1969, this was done only with every tenth admission. However, all subjects in this study are clinic admissions prior to this date.) The information collected includes: age, marital status (using the categories of "married," "common law," and "single," where the last one includes the "visiting relationships" described by Stykos and Back),³⁴ education, occupation, income, religion, history of pregnancies and data on miscarriages and infant mortality, whether the client intends to use family planning to space her pregnancies or to stop them altogether, the type of contraceptive method provided to the client, and some data on the client's partner.

If a client misses a scheduled appointment, her name appears on a monthly list. The list indicates how many consecutive months—either one, two or three—the patient had been missing since her last scheduled appointment. After three consecutive months the patient is automatically dropped from the records. The drop-out sample was obtained from the list of all clients in Jamaican clinics whose third consecutive month of absence was being reported in the list for June, July, and August, 1969. Starting from a randomly selected first number, every following tenth patient who was listed as having missed three consecutive visits was assigned into the sample of drop-outs.

The sample of *active* clients was obtained as follows: for each drop-out, the admissions records of the clinic to which the drop-out belonged were consulted and the client admitted right after the drop-out was designated as a control (an active case), provided that her name did not appear on any of the monthly lists of missed visits. If it did, she was rejected, and the second choice for a control case became the client admitted just before the drop-out. If she too failed to qualify—had missed some visits—then the third choice was the client admitted right after the first choice.

Because of numerous errors in the monthly lists of missed visits, the classification of each case as drop-out or active was checked by going to her complete record, located in the particular clinic to which she belonged. Most of the corrections consisted of excluding "active" cases from the sample because they had in fact missed a visit somewhere. The final classification yielded 344 drop-outs and 264 active cases.

Clearly, the working definitions of a drop-out (3 consecutive scheduled visits missed) and an active case (no missed visits during a comparable time as a client of the same clinic) are necessarily arbitrary. However, the rationale was that if the period of delinquency in defining the drop-out is too short (e.g., one missed visit), then one is insensitive to the effects of those variables which act with some delay. Moreover, a certain proportion of those missing only one visit come back and they are not "true" drop-outs. On the other hand, if the period of delinquency picked were too long (e.g., six consecutive months missed), certain practical difficulties would have arisen, because the client's records are closed after 3 consecutive months.

The selection of the *interview* sample of drop-outs involved a procedure designed to minimize interviewers' travel time. Clinics were randomly selected from 4 parishes: the urban one (Kingston-St. Andrew Council) and 3 strata of rural parishes which were grouped according to performance (average number of drop-outs). Within the designated clinics, the cases for study were selected as before—every

tenth client whose third consecutive month of absence was being reported on the list for June, July, and August, 1969. The clinic records were then checked for accuracy and to exclude those few clients who had returned to the clinic within the next two months following the 3 months of delinquency. The period of 5 consecutive months of delinquency was selected partly because of the impossibility of interviewing the clients as soon as they were identified from the lists. Moreover, the 5 months gave a longer period of observation regarding contraceptive practices and pregnancy experiences of the clients after they dropped out from the family planning clinics. The interview drop-out sample contains 299 former clients, which represents a 93% interview response rate.

The results to be presented below will involve primarily a comparison of the active cases with the drop-outs on the socio-demographic characteristics collected at admission time. The interview sample will be brought in only to present data on reasons for dropping out and to examine the correlates of number of visits made to the clinic before dropping out.

Results

The program of the Jamaica National Family Planning Board (J.N.F.P.B.) enrolled 29,892 clients during the first year of operation, November 1968 to November 1969. (Fewer than 10% of these clients were readmissions from clinics which had already been operating prior to November 1968 under different sponsorship.) These enrolled clients represent 6.4% of the estimated 470,000 women aged 15-44. However, the figure of 6.4% is much too low as an index of the program's effectiveness in reaching the target population, since many of the 470,000 women are not at risk of unwanted conception: they may be sterile, pregnant, sexually inactive, trying to conceive, or practicing contraception outside of the program.

During the first 12 months of operation, the J.N.F.P.B. records indicated that there had been 28,477 missed visits, i.e., instances in which the client failed to keep a single scheduled appointment. This, of course, does not indicate the drop-out rate and additional analyses of the records were carried out by the authors in order to determine the proportion of women who, appearing on the list of first missed visits for a given month, went on to miss visits on additional consecutive months and thus became "drop-outs." The lists for the months of May and September, 1969, were taken and the women were followed prospectively. Of the clients who missed a first visit, about 70% went on to miss a second visit, and 62% missed a third consecutive visit as well. If the lists for the 2 months were representative of the entire year's operation, it would appear that a substantial proportion of clients become drop-outs after missing a single visit and that, therefore, dropping out is a serious problem for the family planning clinics. (Because the designation of drop-out is an arbitrary one and no one is prevented from later returning to the clinic, it is worth noting that about one quarter of drop-outs, having missed 3 consecutive visits, returned within the following 2 months. The authors estimate this from the records of a random sample of 10 urban clinics.)

Let us now turn to an examination of client characteristics which may be associated with dropping out. Table

3 shows that the variation in the drop-out rates by type of union is almost exclusively due to the higher rates of those clients who are single. Table 4 reveals that the very young and the very old clients have strikingly higher drop-out rates. However, the quadratic trend accounts for only part of the association and significant higher order trends are also in evidence. A speculative interpretation of the findings in Table 4 might suggest that several forces may be operating to produce the results: (a) maturity and responsibility: young women may find it harder to keep scheduled appointments; (b) need for family planning: this need may drop off sharply in women who are over 40 years old; (c) desire to have children: this desire may be particularly

strong in the very young clients who presumably have few or no children as yet.

The last point brings us to Table 5 which presents the association of the drop-out rates with the number of living children which the client has. Again, we see a curvilinear association, where the women with very few and very many children have higher rates of dropping out.

Tables 3 through 5 have dealt with 3 variables which are interrelated among themselves. Specifically: (a) age and number of living children are highly related ($r = .68$); (b) married women are older (mean = 30.4) and have more living children (mean = 4.7) than those in a common law union (26.4 and 4.0, respectively) or those classified as single (24.7 and 3.0, respectively). In order to gain a more precise picture of the associations with dropping out, more detailed tables were generated in which drop-outs and controls were simultaneously classified on marital status, age, and number of living children. Analyses in which one or another variable was held constant indicated that: 1) single clients remained higher in their drop-out rates than the married or common law clients when either age or number of living children (or both) were held constant. However, there was some indication that the differences in the rates (for single vs. other clients) were especially pronounced in the groups intermediate on age (20-29) and on number of living children (2-5). That is, when the overall rates are relatively low, then the effect of being single is particularly noticeable. 2) Clients with very few (0-1) or with many (≥ 8) living children remained higher in their drop-out rates within each type of union and when age was held constant. 3) The higher drop-out rates for the very young and very old clients were observed within each type of union, but disappeared when number of living children was held constant.

A number of variables were clearly unrelated to dropping-out. These were: (a) education, occupation, and income of the client; (b) occupation and income of client's partner; (c) client's religion; (d) client's reason for seeking family planning (spacing vs. preventing pregnancies); (e) age at first pregnancy, type of union at first pregnancy, and number of different partners involved in past pregnancies. Even though the tables showing the distributions for these variables are omitted from this report, this in no way indicates that only significant associations provide useful information. For the administrator of a clinic, it may be just as useful to know that social class variables are unrelated to dropping-out as it is to know that age and marital status are related.

Table 6 presents the relationship of drop-out rates to data on past pregnancy experiences. Women who have had a miscarriage or who have recently been pregnant are more likely to stay in the family planning program. However, child mortality, unlike miscarriages, shows no association with drop-out rates. Additional analyses of the association of miscarriages with dropping-out revealed that: (a) it is particularly strong among women who are below median on number of living children (≤ 3), $Q = .45$, $p < .001$, but is not significant for those above the median, $Q = .09$; (b) the association is somewhat stronger among those who are married ($Q = .36$) than those who are single or in a common law union; (c) the relationship is stronger among those who are in intermediate age categories. Additional analyses of the association of drop-out rates with recency of

Table 3—The Association of Type of Union with Dropping Out

	N	% Drop-out
Married	152	55.3
Common law	235	51.9
Single	218	61.9
Total	605	56.4
Partition of chi square:		
Married & common law vs. single	$\chi^2 = 4.29$	($p < .05$)
Married vs. common law	$\chi^2 = 0.42$	(n.s.)

Table 4—The Association of Age with Dropping Out

	N	% Drop-out
≤ 19	69	71.0
20-24	175	50.9
25-29	171	58.5
30-34	111	52.3
35-39	53	43.4
≥ 40	24	79.2
Total	603	56.1
Partition of chi square:		
Linear component	$\chi^2 = 0.61$	(n.s.)
Quadratic component	$\chi^2 = 6.44$	($p < .025$)
Remainder	$\chi^2 = 10.85$	($p < .025$)

Table 5—The Association of Number of Living Children with Dropping Out

	N	% Drop-out
0-1	88	69.3
2-3	230	53.0
4-5	156	50.0
6-7	82	57.3
≥ 8	50	66.0
Total	606	56.3
Partition of chi square:		
Linear component	$\chi^2 = 0.13$	(n.s.)
Quadratic component	$\chi^2 = 10.92$	($p < .001$)
Remainder	$\chi^2 = 0.46$	(n.s.)

Table 6—The Association of Miscarriages, Child Mortality, and Recency of Last Pregnancy with Dropping Out

		N	% Drop-out	
Number of miscarriages	0	448	58.9	Yule's Q = .19 p < .05
	≥ 1	160	49.4	
	Total	608	56.4	
Number of child deaths	0	483	56.5	Yule's Q = .02 n.s.
	≥ 1	118	57.6	
	Total	601	56.7	
Recency of last pregnancy	Past year	80	43.8	Yule's Q = .28 p < .025
	> 1 year	516	57.9	
	Total	596	56.0	

Table 7—The Association of Contraceptive Method with Dropping Out, for Urban and Rural Clinics

		All Clients		Rural		Urban	
		N (%)	% Drop-out	N (%)	% Drop-out	N (%)	% Drop-out
Contraceptive method	Pill	401 (70.0)	57.4	245 (76.1)	62.0	155 (62.2)	49.7
	IUD	80 (14.0)	56.2	53 (16.5)	69.8	27 (10.8)	33.3
	Other (see text)	92 (16.1)	53.3	24 (7.5)	50.0	67 (26.9)	55.2
	Total	573 (100.1)	56.5	322 (100.1)	62.4	249 (99.9)	49.4

last pregnancy revealed that it is particularly strong among the single clients ($Q = .42$) and those intermediate on age; number of living children had no consistent influence on the association.

Let us now turn to an examination of rural-urban differences. Because active cases and drop-outs were matched on location of clinic and length of time in program, the drop-out rates in the urban clinics (Kingston-St. Andrew Council) will not be different from those in the rural clinics (the remainder of the island), and we can only study the possible effects of the rural-urban dimension on other associations with dropping-out. (Because the errors in the monthly lists of missed visits consisted of more under-reporting in rural clinics, these yielded fewer truly "active" cases once the recording errors were corrected. Thus rural clinics *appear* to have higher drop-out rates, as shown in Table 7, but this is only an artifact, not a finding.)

Clients from rural clinics do not differ on type of union and mean age from urban clients, but they do have more living children (4.2 vs. 3.4 for urban clients). Only two associations were found affected when the rural-urban variable was held constant: the higher drop-out rates among the single clients and the lower drop-out rates among those who experienced pregnancy during the past year, are found primarily among the rural clients.

Table 7 presents the association between contraceptive method and drop-out rates for the total sample, and separately for the rural and the urban clinics. Contraceptive methods are categorized as pill, IUD, and "other," which includes jelly, cream, foam, diaphragm, and condom. While there is no overall association between drop-out rates and

type of contraceptive method used, there are some rural-urban differences: 1) Rural clients are relatively more likely to get pills and IUD's, whereas "other" methods are more likely to be given to urban clients. 2) While the pill is associated with average drop-out rates both within the urban and rural groups, the IUD is associated with higher rates among rural clients and "other" methods are associated with higher rates among urban clients. Thus the allocation of the non-pill methods in rural and urban clinics is just the opposite to what it should be if one were trying to reduce drop-out rates. Since it is the clinics' official policy to provide the type of contraceptive method which the client requests, or chooses after the alternatives are explained to her, the above finding would seem to call for a re-assessment of this procedure.

Let us now turn to a brief examination of the data on the 299 drop-outs in the interview sample. Our objectives are: (a) to compare drop-outs who only had 1 or 2 visits before dropping out with those who had 3 or more visits; (b) to examine the answers to the following question: "What would you say was the main reason why you stopped going to the clinic?" The first aim is in effect an effort to determine if the variables which have discriminated drop-outs from active cases (e.g., Tables 3-7) are also the ones which indicate how quickly a client becomes a drop-out. However, in no sense should this objective be seen as a replication of the findings already presented because a variable may either reflect an increased likelihood of dropping-out, no matter how long a client has been in the program, or it may predict only the type of dropping-out which occurs very shortly after a client has enrolled in the program.

There were 157 clients (52.5%) among the 299 cases who dropped-out after 1 or 2 visits. These early drop-outs differed from the remainder on two variables—age and number of living children—and the relationships were exactly like the curvilinear associations shown in Tables 4 and 5 for discriminating drop-outs from active cases. That is, among the early drop-outs, there was an excess of clients who were either very young or very old, and who either had very few or very many living children ($p < .025$ for significance of quadratic trend for both variables). Additional variables, such as type of union and the number of miscarriages did not significantly discriminate the early drop-outs from the late drop-outs, but the direction of the differences was consistent with the data in Tables 3 and 6: early drop-outs had more single clients and fewer clients who had experienced a miscarriage.

The data on the type of contraceptive method used suggested that among the pill users, the per cent of early drop-outs (53.7) was about the same as for the total group; however, those using I.U.D. had fewer early drop-outs (33.3%) than did the clients using "other" methods (61.2%; $p < .05$ for significance of difference in the two percentages). It would thus appear that the "other" methods, which are somewhat more inconvenient and obtrusive, are associated with a rather prompt tendency to drop-out.

Let us finally turn to the analysis of the answers which the drop-outs gave to the question "What was the main reason why you stopped going to the clinic?" As Table 8 shows, the inquiry about "the main reason" elicited a second reason in some 56 respondents. Of the total of some 355 reasons given, 28% refer to complaints about the contraceptive method and 17% describe some aspect of the clinic routine. Another 19% of the reasons involve pregnancy; about one-third of these were clients who were already pregnant while applying for family planning, but didn't know it, and dropped out as soon as they were told. Most of the remaining two-thirds were clients who missed some visits and became pregnant; there were only six clients who specifically dropped out because of desired pregnancy. Thus over 90% of the pregnancies were unplanned and, interestingly, in over half of the cases the client claimed to have continued practicing birth control. It is also interesting to note that 12% of the drop-outs are in fact clients at another clinic or they continue to use contraceptives from another source.

The remainder of Table 8 gives the distribution of the cases by reason for dropping out (first response only) and number of visits made before dropping out. In order to test the significance of the association between reason and number of visits, several categories of reasons were omitted

Table 8—Frequency of Reasons for Dropping Out and the Association of These Reasons with Early vs. Late Dropping-Out

Description of category	Number of cases giving this as reason		Number of cases who dropped out		Total*
	First response	Additional response	After 1st or 2nd visit	After 3rd visit or later	
Clinical complaints with contraceptive.	94	4	36	58	94
Pregnancy: wanted pregnancy, became pregnant after missed visits, found to be pregnant after application completed	57	12	36	21	57
Clinic routine as barrier: clinic time inconvenient, too busy, waiting time too long, has to work, no one to look after children.	50	12	26	24	50
Still using contraceptives: moved & joined new clinic, getting contraceptive supplies elsewhere, has enough supplies.	33	12	17	16	33
Husband/partner objects or afraid he would object	14	6	12	2	14
Lost or changed partner	12	2	7	5	12
Can't give a reason, vague reasons ("not interested", "keep forgetting to go").	11	0	6	5	11
Fear of health consequences (cancer, sterility).	10	2	5	5	10
Became ill from other causes.	9	0	5	4	9
Incapable of using contraceptive, not given method of choice.	7	5	6	1	7
Expense of contraceptive	2	1	1	1	2
Total	299	56	157	142	299

* Only the first responses are used here

in computing the chi square: those who were pregnant (since this includes cases who were pregnant at time of application to clinic and who naturally drop out after the first visit, inclusion of this category would misleadingly increase the chi square value), were still using contraceptives (not "true" drop-outs), couldn't give a reason, or cited expense (too few cases). The obtained chi square value of 16.3 (5 d.f., $p < .025$) points to a significant association between reasons and number of visits. An inspection of Table 8 suggests that clients whose husband/partner objects to contraception and those who have a great difficulty using the particular contraceptive they are offered will drop out quite early, while clients who have clinical complaints about the contraceptives stay longer before dropping out.

Discussion and Summary

The findings which have been presented above may be summarized as follows. Clients in Jamaican family planning clinics who are more likely to drop out of the program are those who: are single; are under 20 or over 39 years old; have under two or over 7 living children; have experienced no miscarriages in the past; and whose last pregnancy occurred over a year before joining the program. Additional, multivariate analyses suggest that: (a) The effects of type of union, age, and number of children are relatively independent and additive: hence, clients who are in a legal or common law marriage, who are between 20 and 39 years old, and who have between 2 and 7 living children are particularly likely to stay in the program; (b) the effects of having experienced a miscarriage are especially strong if the client is married, is of intermediate age, and is below median on number of living children; (c) the effects of a recent pregnancy are particularly strong if the client is single and of intermediate age.

Equally noteworthy are the variables which fail to differentiate the drop-outs from those who continue as active cases: education, occupation, and income of the client; occupation and income of the husband/partner; client's religion; spacing vs. prevention of pregnancy as reason for joining the program; age and type of union at first pregnancy; number of different partners involved in previous pregnancies; and type of contraceptive used.

The effects of rural-urban difference on drop-out rates could not be investigated because this variable was held constant in the design of the study. However, certain interaction effects appear worth mentioning: (a) the finding of higher drop-out rates for single clients and those whose last pregnancy occurred over a year before joining the program held primarily among rural clients; (b) rural clients had higher drop-out rates if given IUD, while urban clients had higher rates if given "other" methods (jelly, cream, foam, etc., but not the pill). Moreover, the differential popularity of IUD and "other" methods in rural and urban clinics was such as to aggravate the drop-out problem.

A special sample of drop-outs was examined in relation to how many visits they had made to a clinic before dropping out. Those who dropped out promptly (1 or 2 visits only): were under 20 or over 39 years old; had under 2 or over 7 living children; and listed objections of partners and difficulties with contraceptive method more often—and clinical complaints less often—as reasons for dropping out. Among the reasons for dropping out as given by the total

group, the three most frequent ones (which account for two-thirds of the reasons) were clinical complaints with contraception, wanted and unwanted pregnancy, and inconvenient demands of clinic routine.

The above findings, although they teach us something about a number of variables which are indicative of a higher probability of dropping out, are not without their limitations. We propose to discuss briefly those limitations which derive from the nature of the setting of the study and from its design.

It is possible that the Jamaican setting limits the generalizability of our results in a number of ways. Specifically, the following variables might be important: (a) the level of development of the country, and the attendant variables such as levels of poverty and education, influence of mass media of communication and degree of urbanization; (b) cultural and subcultural norms regarding: the role of the woman, sexual activity and types of sexual union, significance of children, practice of family planning, and so on; (c) the stage of development of family planning programs: how long in existence and what clients are already enrolled, the stage of familiarity and acceptance by the target population, how available has it been made (in terms of such barriers as financial cost, time demands, and inconvenience of being in the program and practicing contraception).

The design of the study is another source of limitation to the generality of the results. This includes: the operational definition of a drop-out, the selection of subjects from a three-month list of missed visits, and the matching of active cases and drop-outs on rural vs. urban clinics. Beyond this, other limitations are a reflection of the objectives of the study. Thus it is important to realize that the results tell us something about variables which reflect motivation to *stay* in the program, but not necessarily about motivation to *enroll* in the program. For example, religion was found unimportant in predicting likelihood of dropping out. This is not to say, however, that religion is equally unimportant in influencing the process of recruitment into the program. It is quite possible that in a particular setting, being of Catholic religion is an important barrier to enrollment, but that among those Catholics who overcome this barrier and do enroll, religion is no longer a variable which affects their motivation to continue in the program.

It is also evident from the data which have been presented that the study did not include the measurement of the many motivational and attitudinal variables which could clarify some of the intervening processes which are operative and which describe in greater depth the psychosocial setting in which contraception is practiced. For example, there could be a number of processes involved which could lead to the higher drop-out rates for single (vs. married or common law) clients in rural clinics: the way such a union is perceived by the client, her partner, and significant others; the client's desire for pregnancy in order to stabilize a tenuous relationship; the greater frequency of changing partners which may prevent the couple from reaching mutual understanding or support regarding such issues as having children, practicing contraception, and staying in the family planning program. Clearly, then, as the simpler demographic variables—age, type of union, number of living children—are identified as reliable and replicable predictors of dropping out, further studies will have to

include the measurement of these intervening processes as well. However, it must not be forgotten that while more complex, and perhaps more subtle, attitudinal and motivational variables advance our understanding of the process of dropping out, the administrators of clinics and those in charge of family planning programs have an understandable preference for dealing with the easy-to-collect demographic variables.

Given the findings reviewed from previous studies of clinic drop-outs, one result in the present study merits a further comment: the absence of an over-all association between contraceptive method and drop-out rates. It is quite possible that whether or not a particular study will show an association between contraceptive method and dropping out will depend on a number of variables. Some of these, of course, are the relatively simple ones which reflect differences in research designs, in type of settings, and in characteristics of the study sample. Beyond these, more complicated issues may also be relevant: the freedom with which the client can choose methods (or switch them later on); the amount of information the client has about the methods before she makes her decision; the existence of traits or characteristics which make certain contraceptive methods optimal for certain clients, and how such a potential client-method fit is affected by client preferences for methods (if she makes the choice) or by clinic personnel practices (if they make the choice for her). Clearly, studies seeking a better understanding of the relationship between contraceptive method and tendency to drop out will have to address themselves to these and related issues.

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